

TECHNICAL REFERENCE · PRINT & KEEP

Quiet Casters: Noise & Vibration Control Spec Guide

One-page quick reference · Full engineering guide + live tools at the QR codes below

Quick answer. Caster noise comes from three sources: hard wheels transmitting floor chatter (40 to 65 dB), swivel bearing rumble, and rig slop. The quiet-cart spec is 8 inch Shore 85A polyurethane (42 to 48 dB at 3 mph), precision sealed bearings, and a kingpinless swivel. Wheel compound is the single biggest lever for noise reduction.

Wheel Compound and dB Transmission

Compound	Shore Hardness	dB at 3 mph	Max Load per Caster	Wear Life (continuous)
Neoprene rubber	Shore 65A	38 to 44	800 lb	2 to 3 years
Polyurethane (soft)	Shore 85A	42 to 48	1,500 lb	5 to 7 years
Thermoplastic (TPR)	Shore 75A	44 to 50	500 lb	2 to 4 years
Polyurethane (standard)	Shore 95A	48 to 54	2,500 lb	7 to 10 years
Phenolic resin	Shore 90D	60 to 68	2,500 lb	10+ years
Forged steel	Shore 90D+	65 to 75	10,000 lb	15+ years

Rig Damping and Raceway Choice

Rig Type	Bearing Combo	Typical dB Reduction vs Baseline	Load Rating
Kingpinless, welded horn, 3/16 steel	Sealed ball wheel + double-ball raceway	6 to 9 dB	2,000 lb per caster
Kingpinned standard	Roller wheel + single-ball raceway	Baseline	1,000 lb per caster
Kingpinless light-duty	Delrin sleeve wheel + precision raceway	8 to 12 dB	500 lb per caster
Heavy kingpinless with isolator	Sealed ball + needle thrust	10 to 14 dB (resonance kill)	3,500 lb per caster
Rigid with swivel lock	Sealed ball wheel, no swivel	5 to 8 dB on straight-run	Same as rig



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